

# Epi Monthly Report

Office of Epidemiology and Disease Control



Miami-Dade County  
**HEALTH DEPARTMENT**

## Antibiotic resistance among invasive *S. pneumoniae* cases: Surveillance results for 2000

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Although invasive antibiotic-resistant *Streptococcus pneumoniae* (*S. pneumoniae*) cases were reportable since mid-1996, the reporting of all invasive *S. pneumoniae* cases became reportable in mid-1999 to allow the calculation of the percentage of antibiotic-resistant *S. pneumoniae* cases. We would like to share with you the surveillance results for 2000.

Resistance for the purposes of this report is defined as intermediate or full resistance to at least one antibiotic on the *S. pneumoniae* panel. The *S. pneumoniae* panel varies from hospital to hospital as do the testing methods. The antibiotics usually tested included penicillin, ceftriaxone, erythromycin and trimethoprim/sulfamethoxazole. However, azithromycin, cefotaxime, cefuroxime, chloramphenicol, clindamycin, erythromycin, imipenim and levofloxacin were also tested by some hospitals.

During 2000, 311 invasive *S. pneumoniae* cases were reported to us. Of these, 235 (75.6%) were resistant to any antibiotic (Table 1). Statewide, 65.9% were resistant to any antibiotic. Among children 4 years old and younger in Miami-Dade County, 114 (80.3%) of 142 were resistant (Table

2). Note that 45.8% of all isolates reported to us were among children 4 years and younger, which is likely due to the increased risk of *S. pneumoniae* among young children as well as different reporting rates among hospitals.

These results must be interpreted carefully, however, because we suspect underreporting to be a greater problem among sensitive than antibiotic resistant isolates. The Florida Bureau of Epidemiology had projected that 432 sensitive *S. pneumoniae* isolates (based on 20 cases per 100,000 population) should have been reported during 2000. Only 311 (71.9%) were reported. On the other hand, the Bureau had projected 173 drug-resistant isolates (based on a rate of 40% resistance), and 136% of the projection was reported. In 1998, a study of antibiotic resistance among invasive *S. pneumoniae* isolates in the ten largest, nonfederal, acute care hospitals in Miami-Dade County was undertaken. Of the 232 cases included in the study, 59.9% demonstrated intermediate or full resistance to one or more antibiotics (S. Jackson, D. Katz). Although it is possible that the rate of resistance increased from 1998 to 2000, a comparable study is needed. Dr. Dolly Katz, regional epidemiologist, is



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Table 1: Percent of invasive *S. pneumoniae* isolates with antibiotic resistance, among all age groups Miami-Dade County, 2000

Antibiotic	Total number of cases tested	Fully resistance	Intermediate resistance	Total resistant
Penicillin	299	27.4%	37.1%	64.5%
Erythromycin	234	35.9%	0.9%	36.8%
Trimethoprim/Sulfamethoxazole	171	52.0%	4.7%	56.7%
Azithromycin	57	49.1%	15.8%	64.9%
Ceftriaxone	163	4.9%	12.3%	17.2%
Cefotaxime	154	14.9%	20.1%	35.0%
Cefuroxime	64	29.7%	34.4%	64.1%
Chloramphenicol	184	17.4%	0.0%	17.4%
Clindamycin	106	14.2%	3.8%	18.0%
Imipenim	57	19.3%	31.6%	50.9%
Levofloxacin	165	0.6%	1.2%	1.8%
At least one antibiotic	311			75.6%

Table 2: Percent of invasive *S. pneumoniae* isolates with antibiotic resistance, among 0-4 year-olds Miami-Dade County, 2000

Antibiotic	Total number of cases tested	Fully resistance	Intermediate resistance	Total percent resistant
Penicillin	132	30.3%	40.2%	70.5%
Erythromycin	89	47.2%	0.0%	47.2%
Trimethoprim/Sulfamethoxazole	58	58.6%	3.4%	62.0%
Ceftriaxone	80	5.0%	13.8%	18.8%
At least one antibiotic	142			80.3%

planning such a study that will include all hospitals and will also evaluate the surveillance system. We greatly appreciate your efforts in making the invasive *S. pneumoniae* surveillance system work. The system allows us to generate community-level data regarding the problem of antibiotic resistance.



### West Nile Virus Update

M. Trepka, MD, MSPH



Thus far, West Nile virus (WNV) has been isolated from three birds in Miami-Dade County, all collected in late August. There have been no cases of WNV infection identified in a human in Miami-

Dade although there are now seven cases in Florida.

- Madison county
  - 64 year-old female, onset 7/13
  - 73 year-old male, onset 7/14
- Jefferson County
  - 40-year old male, onset 8/8
- Monroe County
  - 73 year-old female Florida resident (not a Monroe County resident but probably exposed in Monroe County), onset 7/26



- 50 year-old male, onset 8/16
- 54 year-old female, onset 9/10
- Washington County
  - 73 year-old female, onset 9/9

We are continuing to conduct surveillance of WNV infection in humans and request that you report any suspected case to us immediately at (305) 324-2413. We strongly recommend the testing of all persons with symptoms of viral meningitis (especially in adults) or encephalitis. We will arrange testing for West Nile Virus and other arboviruses. There is no charge for this testing.

Guidelines for arboviral testing for St. Louis Encephalitis (SLE), West Nile Virus (WNV) Encephalitis, Eastern Equine Encephalitis (EEE), Dengue (DEN) and California Group (CAL):

- 1) If less than 14 days post onset of clinical signs, submit serum and CSF, if available. (A negative test is not definitive; a positive serology in a single specimen requires confirmation by a convalescent specimen to be valid. However, do not wait for the convalescent serum before submitting the acute specimen.)
- 2) If greater than 2 weeks post-onset, submit serum.

In addition, we also recommend that you submit an acute stool specimen or an acute throat swab for enteroviral testing.

Because we have had three positive birds, the West Nile Virus alert now includes Dade County. The risk of acquiring the infection is low, but we recommend that Miami-Dade County residents, especially older adults, follow these recommendations to minimize their risk:

- Eliminate stagnant water in any receptacles in which mosquitoes might breed
- Avoid outdoor activities at dusk and dawn when mosquitoes are likely to be looking for blood meals
- If you must be outdoors when mosquitoes are active, cover up by wearing shoes, socks, long

pants, and long-sleeved shirts

- Use mosquito repellent whenever mosquitoes are present. However, be sure to follow manufacturers' directions. Mosquito repellent should not be put on eyes, lips mouth, cuts, wounds, or irritated skin. Adults should apply repellent on children and not apply the repellent to children's hands since children often put their hands in their mouths.

The Florida Department of Health has a toll-free West Nile Virus hotline (1-800-871-9703) to obtain information about West Nile Virus and to report dead birds.



**To report diseases or for information:**

**Office of Epidemiology and Disease Control**

Childhood lead poisoning prevention program	(305) 324-2414
Hepatitis	(305) 324-2490
Other diseases and outbreaks	(305) 324-2413
HIV/AIDS Program	(305) 377-7400
STD Program	(305) 325-3242
Tuberculosis Program	(305) 324-2470
Special Immunization Program	(305) 376-1976
Nights, weekends, and holidays	(305) 377-6751





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## **Bioterrorism surveillance**

We have received a number of questions from health care providers about what specifically to be alert for regarding bioterrorist events. The New York City Health Department has put together information, which they have graciously shared with us, that addresses this question well. We have adapted it to our county.

### **Clinical Recognition of Suspected Bioterrorism**

**Events:** Healthcare providers in Miami-Dade County should be alert to illness patterns and diagnostic clues that might signal an unusual infectious disease outbreak due to the intentional release of a biological agent and should report these concerns immediately to the Miami-Dade County Health Department. Because of incubation periods of biological agents, the covert release of a biological agent will not have an immediate impact and will first become apparent when ill patients present for medical care.

Look for the following clinical and epidemiological clues that are suggestive of a possible bioterrorist event:

- Any unusual increase or clustering in patients presenting with clinical symptoms that suggest an infectious disease outbreak (*e.g. = 2 patients presenting with an unexplained febrile illness associated with sepsis, pneumonia, adult respiratory distress, mediastinitis, or rash; or a botulism-like syndrome with flaccid muscle paralysis especially if occurring in otherwise healthy persons.*)
- Any case of suspected or confirmed communicable diseases that are not endemic to our area (*e.g., anthrax, plague, tularemia, smallpox, or viral hemorrhagic fever*)
- Any unusual age distributions for common diseases (*e.g., an increase in what appears to be a chickenpox-like illness among adult patients*)
- Any unusual temporal and/or geographic clustering of illness (*e.g., persons who attended the same public event or religious gathering*)

- Any sudden increase in the following non-specific syndromes, especially if illness is occurring in previously healthy persons and if there is an obvious common site of exposure:
  - Respiratory illness with fever
  - Gastrointestinal illness
  - Encephalitis or meningitis
  - Neuromuscular illness (e.g., botulism)
  - Fever with rash
  - Bleeding disorders
- Simultaneous disease outbreaks in human and animal populations

Some infections caused by biological agents present with distinctive signs that can provide valuable diagnostic clues. *In previously healthy persons presenting with a febrile illness*, the following signs and symptoms are highly suggestive of infection with certain biological agents:

#### **Diagnostic sign**

#### **Disease**

- Widened mediastinum: **Inhalational anthrax**
- Gram negative pneumonia with hemoptysis: **Pneumonic plague**
- Vesicular/pustular rash starting on face and hands, with all lesions at the same stage of development: **Smallpox**

Similarly, microbiology laboratorians should be alert to microbiologic clues that may indicate the presence of a potential bioterrorist agent. For example, blood cultures growing Gram-positive rods, especially if found in multiple cultures and/or the clinical syndrome is suggestive of anthrax, should be evaluated for *Bacillus anthracis*. Characteristics of *B. anthracis* include: Gram positive rods, often in chains; non-motile; non-hemolytic on sheep blood agar; positive for India Ink capsule stain if obtained from the blood; and a characteristic consis-



tency of “beaten egg whites” when colonies are picked with an inoculating loop. All suspect cultures should be immediately referred to the Miami Branch Laboratory for further testing at the contact number listed below.

Most of the potential pathogens that could be used as a biologic weapon (*e.g., anthrax, plague, and smallpox*) would present initially as a non-specific influenza-like illness. Therefore, an unusual pattern of respiratory or influenza-like illness (*e.g., occurring out of season or large numbers of previously healthy patients presenting simultaneously*) should prompt clinicians to alert the Miami-Dade County Health Department. These disease patterns might represent an early start to the influenza season, the introduction of a new pandemic strain, or could be the initial warning of a bioterrorist event.

#### Response to Suspected Bioterrorism Event

Any unusual cluster or manifestations of illness should be reported immediately to the Miami-Dade County Health Department:

**8 am – 5 pm Monday – Friday (305) 324-2413**  
**Nights and weekends (305) 377-6751**

For more detailed clinical information on specific pathogens that might be used in a bioterrorist event, consult the

American College of Physicians:

<http://www.acponline.org/bioterr/>

Association for Infection Control Practitioners:

<http://www.apic.org/bioterror/>

CDC Bioterrorism Preparedness and Response:

<http://www.bt.cdc.gov>.

Infectious Disease Society of America:

<http://www.idsociety.org>

Johns Hopkins Center for Civilian Biodefense:

<http://www.hopkins-biodefense.org>

In addition, the Johns Hopkins Center for Civilian Biodefense has written consensus guidelines on the medical and public health management of the primary bioterrorist agents, including smallpox, anthrax, botulism, plague and tularemia. These guidelines were published in the Journal of the American Medical Association and archived copies

are available at <http://jama.ama-assn.org>.

US Army Medical Research Institute of Infectious Diseases: <http://www.usamriid.army.mil/education/bluebook.html>



## Monthly Report

### Selected Reportable Diseases/Conditions in Miami-Dade County, August 2001

Diseases/Conditions	Reported Cases	2001	2000	1999	1998
	this Month	Year to Date	Year to Date	Year to Date	Year to Date
AIDS *Provisional	91	946	930	1014	1154
Campylobacteriosis	10	85	108	97	39
Chancroid	0	0	0	0	2
<i>Chlamydia trachomatis</i>	259	1959	2466	2931	1464
Ciguatera Poisoning	0	0	1	0	0
Cryptosporidiosis	3	11	10	10	8
Cyclosporiasis	0	0	0	0	1
Diphtheria	0	0	0	0	0
<i>E. coli</i> , O157:H7	0	0	1	4	2
<i>E. coli</i> , Other	1	1	1	0	1
Encephalitis	0	0	0	0	0
Giardiasis, Acute	24	181	145	62	40
Gonorrhea	159	1097	1993	1928	1227
Granuloma Inguinale	0	0	0	0	0
<i>Haemophilus influenzae</i> B (invasive)	0	1	1	1	0
Hepatitis A	15	105	48	57	92
Hepatitis B	12	43	33	16	52
HIV *Provisional	198	1134	1024	1067	1254
Lead Poisoning	46	175***	292	Not available	Not available
Legionnaire's Disease	0	1	0	0	1
Leptospirosis	0	0	0	0	0
Lyme disease	1	5	3	0	1
Lymphogranuloma Venereum	0	0	0	0	0
Malaria	0	12	18	14	18
Measles	0	0	0	0	0
Meningitis (except aseptic)	0	13	16	24	14
Meningococcal Disease	1	13	20	14	10
Mumps	0	0	1	2	0
Pertussis	0	1	7	10	14
Polio	0	0	0	0	0
Rabies, Animal	0	0	0	0	1
Rubella	0	0	1	0	0
Salmonellosis	38	176	183	187	120
Shigellosis	18	91	149	114	138
<i>Streptococcus pneumoniae</i> , Drug Resistant	6	130	149	136	63
Syphilis, Infectious	29	142	83	49	19
Syphilis, Other	131	677	496	593	440
Tetanus	0	1	0	0	0
Toxoplasmosis	3	10	0	1	0
Tuberculosis *Provisional	22	139	160	176	181
Typhoid Fever	0	0	2	15	3
<i>Vibrio cholera</i>	0	0	0	0	0
<i>Vibrio</i> , Other	0	0	0	0	1

\* Data on AIDS are provisional at the county level and is subject to edit checks by state and federal agencies.

\*\* Data on Tuberculosis are provisional at the county level. \*\*\*: All follow-up cases were removed



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